

An  
Inaugural Dissertation  
On the  
Modus Operandi  
Of  
Medicines.

By William Hamlin  
Virginia.

Read March 12<sup>th</sup> 1823

St. Louis, Mo.  
Sept. 10, 1854

Dear Sir

I have the honor to acknowledge the receipt of your letter of the 8th inst.

in relation to the above.

I have the honor to inform you that the same has been forwarded to the proper authorities for their consideration.

I am, Sir, very respectfully,  
Your obedient servant,  
J. M. Smith

In the entire range of Medical Science, there is  
no subject on which a greater diversity of senti-  
ment prevails, than on the Modes of Cure of  
Medicine.

While one class of physicians con-  
tend that the remedial powers of the differ-  
ent articles of the Materia Medica may all  
be explained on the principle of nervous affe-  
ction, denominated in the familiar lang-  
uage of the day Sympathy, or Consent of parts;  
another no less respectable, not content with  
the doctrine of Sympathy alone, declare that  
the principle of absorption is alike necessary  
for a full and clear illustration of the subject.  
The advocates of the Sympathetic doctrine  
allege, that all medicines, in the first place  
produce a local impulsion, which being  
communicated by some as yet, mysterious  
agency, to more distant parts throws them  
into action corresponding with the nature

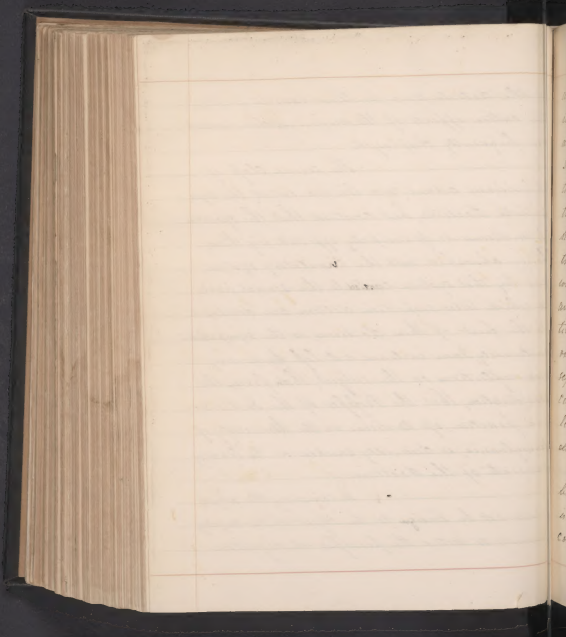
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of the article, and in these several parts, the entire effects of the medicines administered are frequently displayed.

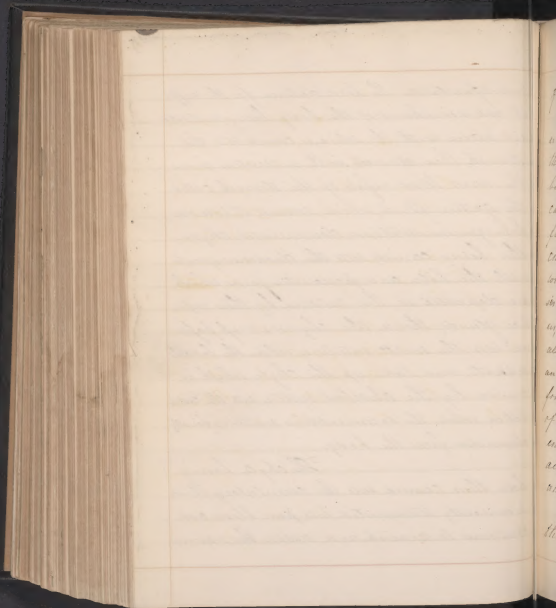
The second class of physicians admit to a limited extent the sympathetic doctrine, but contend that the operation of medicines is principally effected by their being absorbed into the circulatory system, and by that system carried to the several parts, on which their respective actions are developed. To the first of these doctrines, or the sympathetic exclusively, I am inclined, not less from my own reflections on the subject, than from the consideration, that the Professor of the Institutes and practice of Medicine in the University of Pennsylvania, is deservedly ranked as the leading advocate of the doctrine.

In considering this subject, it will not be foreign to the object of our enquiry, cursorily to notice the processes of digestion.



and assimilation. The food destined for the support and nourishment of the body, being masticated and mixed with the saliva, is carried into the stomach, there it meets with a secretion from the small blood vessels of the stomach, called the gastric fluid, which converts it into one homogeneous substance denominated chyme, this being carried into the duodenum, mixes with the bile and pancreatic juice which are deposited in this intestine by their respective glands, thence the chymus passes on into the small intestine, where the lactants separate and take up the chyle, which is carried by the absorbent system into the circulation, while the excrementitious matter is finally eliminated from the body.

The chyle having been thus carried into the circulatory fluids is evidently transmuted into pure blood, and continues to nourish and sustain the various

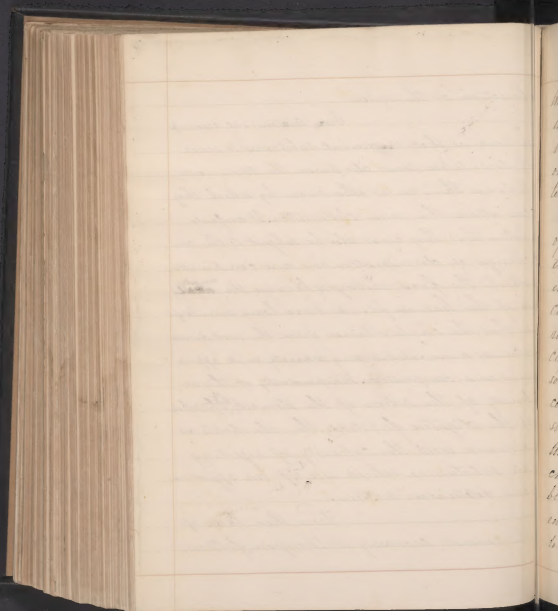




functions of the system.

Our anatomical researches teach us that medicinal substances to reach the circulation must also pass the same route, because there are no other means by which they can attain the same destination. It naturally follows that they must also be subject to the same changes of decomposition and new combinations which the food undergoes because the <sup>analogy</sup> ~~analogy~~ of the human fluids have long since taught us that the chyle obtained from the most diverse elements never exhibits any variety in its appearance and composition. Independently of this affinity of the action of the stomach, <sup>the</sup> the whole of the digestive functions, the absorbents are endowed with the capacity of rejecting all substances which are of an offensive and disordered nature.

From these laws of the animal economy it therefore follows,



but in substance you enter the circulation  
in their form & for real, or without being  
altered, you disappear entirely changed,  
or so modified that their actions & frame  
have been entirely lost.

The essential power, however  
of every remedial article depends upon  
its absorption properly, the action becoming  
inert when this property is destroyed,  
consequently so soon as medicines are  
absorbed by the digestive functions  
capable of being taken via by the ab-  
sorption system their remedial character  
ceases. This argument continues to you  
brought in a progressive investigation of  
the subject & as we not only give the  
chyle a homogeneous fluid but even the  
blood itself, the very location of the reme-  
dial power is active medicines according  
to the most scientific axioms, for the medium



of absorption

The weight of evidence in support of this position is overwhelming. It is considered an established fact by the ~~authorities~~ and learned Fordey in his invaluable treatise on febrile diseases, and Lind who has written so ably on the diseases of hot climates, especially, particularly on the homogeneous nature of the blood, in his excellent treatise on Scurvy, in which he clearly shows that when the body of a scorbutic patient is to appear a little less, there is a mass of pure blood in the system, the homogeneous nature of which is the appearance of healthy blood, and is the only evidence.

Then we signed an order for  
 the Spine attend for a signature with you  
 when it comes, on this point, but after  
 some time I it appears, at the mail at present  
 we deem it superfluous to add an additional



science

The establishment of the lymph, fact  
 in the homogeneous and unchangeable nature  
 of the blood must show the fallacy of the  
 universal doctrine. In a then be any power  
 to draw the doctrine of absorption out, it must  
 be the selection of medicinal articles in the blood  
 or where as we find conclusive evidence to this  
 fact. It is true that we have much about the  
 action of Empoison, Symplocos, yonic, & other  
 adreiferous substances, but does this prove the  
 doctrine of absorption? we think not we know  
 that odours not unfrequently penetrate through  
 what have been considered impermeable substances.  
 or we know that the whole system may become  
 impregnated with these adreiferous substances by  
 having been transmitted through it, in the same  
 way as through inanimate matter, without having  
 any connection particularly with the arterial or  
 circulating systems





But raising that objection aside, one of the questions asked will constitute and determine the origin of the blood has already been in that form any of the above general articles. It must concede however that from my memory at Madison and Charleston has been discovered in the serum of the blood, but this is not until the blood may be regarded as having undergone a partial decomposition for what are the circumstances under which this takes place? The blood in the last place is withdrawn from the capillary circulation, and is thereby removed from the vital energy of the system and ceases as before separating it separately into serum and coagulable lymph which may be considered in the incipient state of decomposition, and it is not until after this stage that those solenizing principles are developed.



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A source of great error in prosecuting researches on this subject results from not keeping our attention constantly directed to the grand distinction of living and dead matter, and the very diverse nature of the several laws which govern them.

The laws of physiology are entirely distinct from those of chemistry and we should subject ourselves to ridicule were we to attempt to explain a chemical experiment on those principles which appertain exclusively to vitality. And yet we find that the laws of chemical science are constantly resorted to for the purpose of illustrating the phenomena of vital actions.

The power of the vital energies has never been fully appreciated, but so far as the subject has been investigated the results <sup>have been</sup> conc. have in us, and to its action



which effects. In the course of the process of  
 the system of agriculture in the single case that the  
 most common instances may be supposed to be by  
 the pasture price while the lands coast of the  
 strength remain unchanged, and the best  
 lands and naturally organized farms, being  
 more in it with reference to themselves.

These considerations enable us to explain, without ab-  
 andoning our theory, those facts which have been oppo-  
 sed against the doctrine, as are vindicated, deduced  
 from the solution of certain articles in the sections  
 and sections.

During the stage of agriculture,  
 these articles have been decomposed and new views  
 every principle carried into the circulation, while  
 these they were subject to the influence of the  
 vital energy, and prevented from combining,  
 and so soon are they removed beyond the  
 sphere of local action, than the laws of  
 chemistry again prevail and the original combi-



rather use it as a shield.

In reviewing the labours of our medical predecessors, we are impressed with mingled emotions of ridicule and regret, when we reflect on the great wastes of time and resources which have been expended in the prosecution of experiments on dead matter to determine the principles and functions of living organized bodies, and we are constrained to apply this charge to some of the most illustrious members of the profession.

It was the application of laws foreign to reality, for the illustration of medical phenomena, which threw a veil of obscurity around the otherwise plain and labours of Boerhaave and Sydenham.

One of the strongest arguments which the Humours set forth in defence of, is the supposition of spots which result from the

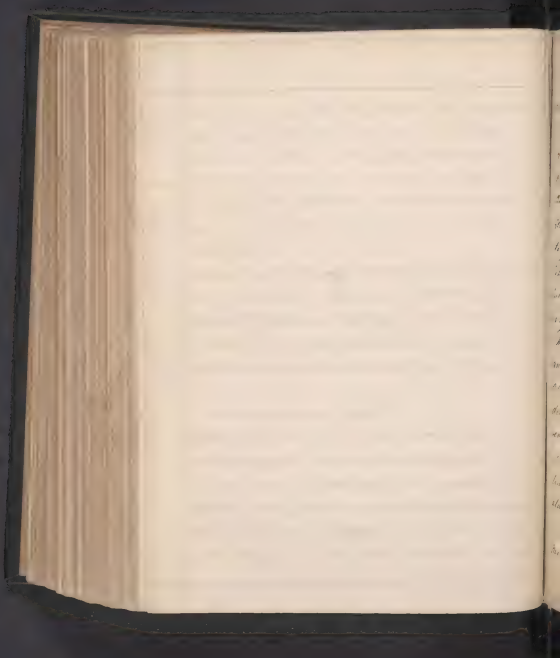




introduction of medicinal substances into the blood vessels of living animals, and if full evidence and entire confidence could be given to the reports of some of the experimentalists, little more would be required to confirm and establish the humoral doctrine.

It is not possible to doubt but that medicines operated on the system by being absorbed into the circulation, & then produced the same effects as result from their internal administration might be obtained by injecting into a vein a small quantity of any given article.

The fallacy however which alone most experiments is considerably heightened by their being performed on living animals, and we know no circumstances under which fallacious impressions would be more likely to occur, than in tracing the effects of medicines on tortured, mangled, and afflicted



## Animals.

The animal functions it must be admitted, are greatly under the influence of corporeal suffering. We have seen the deleterious effects of Opium suspended by severe castigation, and we shall endeavour to show that most of the effects which have been attributed to rejected Medicines, may be justly ascribed to the violence with which they were administered.

We have seen copious discharges of sweat and urine from cats produced some great laceration, and have also witnessed the same discharges from a servant boy in consequence of a severe whipping. Long and profuse fits of pain, not infrequently occur in horses of nervous temperaments in consequence of sudden and great alarms.

Some instances by a gentleman of the Medical Class, Mr. Power, from South Carolina.



on whom variety I rely with the most implicit confidence. That he knew obdurate constipation in a case of chol is completely removed when all the usual remedies had proved ineffectual, ~~he~~ by a sudden and violent alarm, purposely induced by the physician. This patient had been attended by other physicians, when the one in question was consulted. On entering the patient's apartment threw off his coat and swore that if the patient did not recover that he would kill him. The poor fellow terribly affected immediately called for the Chamber and had a copious discharge from the bowels. The suspicion of a real fever under some persons and particularly those unaccustomed to witnessing such spectacles not infrequently produces vomiting and our sympathetic feelings are so powerfully in some instances that in witnessing great emotions of grief or joy we are not infrequently affected in a similar manner.

Our medical

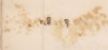


books abound with cases of Epilepsy, and other spasmodic and convulsive diseases, which have been produced exclusively by saving others labour under affections of a similar nature.

In addition

to the above cited facts and arguments, we are induced to attribute, the effects related by experimentalists, rather to the severity of the operations, than to any peculiar action of the medicine, from their informing us, that the same medicine under like circumstances produces dissimilar effects, that it sometimes purges, sometimes has an emetic effect and at other times only generally deranges the action of the system by inducing convulsion, and other spasmodic actions.

With the view of fulfilling the duty which enjoins the preparation of an original dissertation, we have endeavoured to present some of the facts and reasoning, which we conceive may





be adduced in favour of the sympathetic doctrine  
of the *Modus Operandi* of Medicines. Fully impressed  
with the consciousness of the imperfect manner in  
which the duty has been executed, we submit the  
result of our labour, animated by the hope  
that its numerous imperfections and errors,  
may be regarded with that kind of indulgence  
which enlarged and liberal minds are always  
wont to bestow on the crude productions of  
immature intellect.

Wm Hamlin  
Virginia

